



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,912	01/24/2001	Hiroji Kawai	09792909-4785	5026

7590

01/16/2003

SONNENSCHN NATH & ROSENTHAL

Sears Tower

Wacker Drive Station

P.O. Box 061080

Chicago, IL 60606-1080

EXAMINER

MENEFEE, JAMES A

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 01/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/768,912

Applicant(s)

KAWAI, HIROJI

Examiner

James A. Menefee

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-12 and 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-12 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


PAUL IP
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Art Unit: 2828

DETAILED ACTION

Response to Amendment

In response to the amendment filed 18 November 2002, the specification and claims 9, 10, and 12 are amended, and claim 24 added. Claims 9-12 and 24 are pending.

Drawings

The corrected or substitute drawings were received on 18 November 2002. These drawings are acceptable.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 9, 11-12, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhou (US 5,449,930).

Regarding claims 9 and 24, Zhou discloses a semiconductor device comprising a substrate 21 made of a material different from nitride III-V semiconductor, a device formed on one major surface of the substrate 21 using III-V compound semiconductors, and an electrical connection 53,55 to the device is made directly through a via hole in the substrate. Though not explicitly disclosed, it is inherent that the substrate is a single-crystal substrate. See Fig. 6 of Zhou.

Art Unit: 2828

Regarding claim 11, although Zhou does not explicitly disclose an embodiment where the device is a III-V semiconductor laser, Zhou discloses that the device of the invention may be made of other combinations of group III and group V elements (col. 13 lines 23-42). Both Ga and N are disclosed, therefore it is disclosed that the device may be a III-V nitride semiconductor device. Zhou also discloses that rather than a FET the device may be a semiconductor laser (col. 13 lines 12-22). Thus, the device may be a III-V nitride semiconductor laser.

Regarding claim 12, Zhou discloses that the device is a FET. Although Zhou does not explicitly disclose an embodiment where the FET is made of nitride III-V semiconductors, Zhou discloses that the device of the invention may be made of other combinations of group III and group V elements (col. 13 lines 23-42). Both Ga and N are disclosed, therefore it is disclosed that the device may be a III-V nitride semiconductor device.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou in view of Hatano et al. (US 5,740,192). Zhou discloses the limitations of claims 9, 11-12, and 24 as shown above, but does not disclose that the substrate is made of the materials as claimed. Hatano teaches a group III-V semiconductor laser device that is formed on such substrates as those claimed. Thus, it was known in the art that group III-V semiconductor devices, such as those

Art Unit: 2828

found in Zhou, may be formed on substrates such as those claimed in claim 10. It would have been obvious to one skilled in the art at the time the invention was made to make the substrate of Zhou out of such materials, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Menefee whose telephone number is (703) 605-4367. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



PAUL IP
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

JM
January 3, 2003